

Algal Alerts in the Lachlan Catchment

30th January 2009



Central West Regional Algal Coordinating Committee

This blue-green algal alert report is based on routine monitoring undertaken by the Cowra, Forbes and Lachlan Shire Councils; State Water Corporation and the Department of Water and Energy

These alert levels apply to **non consumptive or recreational contact**. Drinking water safety thresholds are much more stringent

Table 1 – Lachlan Storages Total blue-green algal biovolume equivalents (BVEq) and cell counts in Lachlan Catchment storages

Date/Alert	Storage Sites	Current count (total cells/mL / BVEq)	Previous Alert	Dominant species (BVEq)
28/01/09 RED	Lake Wyangala Dam Wall	343,207 C/ml >7.55 mm ³ /L BVEq	Green	Microcystis flos-aquae.
28/01/09 AMBER	Lake Wyangala at Grabine (Stn 2)	143,547 C/ml 3.2 mm ³ /L BVEq	Amber	Microcystis flos-aquae.
28/01/09 RED	Lake Wyangala State Rec area Site 7	656,421 14.5 mm ³ /L BVEq	Green	Microcystis flos-aquae.
17/12/08 No Alert	Carcoar Dam.	1,059 C/mL 0.02 mm ³ /L BVEq	nil	
13/01/09 AMBER	Lake Cargelligo	223,414 C/mL 4.06 mm ³ /L BVEq	Green	Planktolyngbya sp
13/01/09 AMBER	Lake Cargelligo TWS Site 2 41210042	222,491 C/mL 2.17 mm ³ /L BVEq	nil	Aphanocapsa sp
13/01/09 AMBER	LC intake d/s Lake Curlew	44,656 C/mL 0.4 mm ³ /L BVEq	nil	Aphanocapsa sp.

Table 2 – River Sites. Total blue-green algal biovolume equivalents (BVEq) and cell counts in the Lachlan River

Date/Alert	River Sites	Current count (total cells/mL / BVEq)	Previous Alert	Dominant species
17/12/08 No Alert	Belubula River downstream Carcoar	None detected	nil	.
16/12/08 AMBER	Lachlan River d/s Wyangala Dam	91,752 1.44 mm ³ /L BVEq	nil	Microcystis flos-aquae.
24/11/08 GREEN	Lachlan River @ Cowra	4,896 0.11 mm ³ /L BVEq	nil	Microcystis flos-aquae.
03/12/08 GREEN	Lachlan River @ Forbes	2,316 0.05 mm ³ /L BVEq	nil	Microcystis flos-aquae.
29/01/08 No Alert	Lachlan River @ Condobolin	817 C/mL 0.01 mm ³ /L BVEq	nil	
13/01/09 AMBER	Lachlan River at Lake Cargelligo Weir	23,653 C/mL 0.4 mm ³ /L BVEq	Green	Aphanocapsa sp.
13/01/09 AMBER	Lachlan River at Lake Brewster Weir	25,142 C/mL 0.68 mm ³ /L BVEq	Green	Aphanocapsa sp.
13/01/09 AMBER	Lachlan River at Willandra Weir	14,723 C/mL 0.54 mm ³ /L BVEq	Green	Aphanocapsa sp.
24/11/08 GREEN	Lachlan River at Hillston Weir	73,236 C/ml 0.13 mm ³ /L BVEq	nil	Aphanocapsa sp.

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24/11/08 GREEN	Lachlan River at Booligal Weir	569 C/ml 0.11 mm³/L BVEq	Green	Aphanocapsa sp.
24/11/08 GREEN	Lachlan River at Coorong	596 C/ml 0.18 mm³/L BVEq	Green	Aphanocapsa sp.

Notes:

The bio-volume equivalent (BVEq) calculated for all contributing cyanobacteria species is used to determine alert thresholds. The total observed cyanobacteria genera that contribute to the current alert level are also presented. It is recommended that water treatment and stock management responses should not be altered according to the observed cyanobacteria genera but that the BVEq Alert framework be applied. All cyanobacteria should be considered as potentially harmful to human and animal health when present in blooms.

River users and landholders are advised to avoid waters in areas subject to RED (High) alert levels or with visible algae scums. They should also consider either alternative sources of water for stock. NSW Health advises that any domestic use of surface water without treatment is dangerous and should be avoided. Note, boiling water contaminated with blue green algae **does not** remove toxins

Alert Definitions are as specified in The National Health and Medical Research Council (NHMRC) *Guidelines for Managing Risks in Recreational Water 2005*

The use of these guidelines is endorsed by the Scientific Sub committee of the NSW Algal Advisory Group

Key to alerts for recreational waters

Blue-Green Algal Level	Alert Definition
<p style="text-align: center;">GREEN</p> <p>>500 – <5,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of >0.04 to <0.4 mm³/L for the combined total of all cyanobacteria</p>	<p>Green Alert</p> <ul style="list-style-type: none"> • Low levels of detected – suggesting base crop of blue green algae may be on the increase <p>Action</p> <ul style="list-style-type: none"> • Continue/increase routine sampling to measure cyanobacterial levels
<p style="text-align: center;">AMBER</p> <p>≥5,000 – <50,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of >0.4 to < 4.0 mm³/L for the combined total of all cyanobacteria</p>	<p>Amber Alert</p> <ul style="list-style-type: none"> • Indicates blue-green algae are multiplying • Water may have a green tinge and musty taste and odour <p>Action</p> <ul style="list-style-type: none"> • Water supply authorities to commence filtering with activated carbon • Investigations into the causes of the elevated levels and increased sampling to enable the risks to recreational users to be more accurately assessed
<p style="text-align: center;">RED</p> <p>>50,000 cells/mL potentially toxic cyanobacteria or biovolume equivalent of ≥ 4 mm³/L for the combined total of all cyanobacteria where a known toxic producer is dominant</p> <p>Or</p> <p>The total biovolume of all cyanobacterial material exceeds 10 mm³/L</p> <p>Or</p> <p>Cyanobacterial blooms are consistently present</p>	<p>Red Alert</p> <ul style="list-style-type: none"> • High levels detected • Indicates “bloom” conditions • Toxicity should be presumed • Water will appear green or brownish and may have a strong musty taste and odour • Surface scums could occur <p>Extreme care should be exercised, and contact with the water should be avoided</p> <p>Action</p> <ul style="list-style-type: none"> • Issue Media Release • Water supply authorities to increase filtering with activated carbon as appropriate • Local authority and health authorities to warn the public that the water body is considered to be unsuitable for primary contact recreation

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